

CLAIMS

What is claimed is:

1. A method of collecting data from a storage server comprising:
 - scanning a directory on the storage server;
 - determining a number of child nodes in the directory, and adding the number to a reference count;
 - scanning a child node to collect information about the child node, and combining the information into a summary of the directory; and
 - reducing the reference count after scanning the child node.
2. The method of claim 1, further comprising:
 - writing the summary to a database server.
3. The method of claim 1, wherein scanning a child node comprises using an agent separate from the storage server to scan the child.
4. The method of claim 2, wherein writing the summary comprises writing the summary to a multi-appliance management application (MMA) before writing the summary to a database server.
5. The method of claim 1, wherein scanning a child node to collect information about the child node, and combining the information into a summary of the directory occur concurrently.

6. The method of claim 1, wherein scanning a directory comprises using a directory thread to scan the directory, and wherein scanning a child node comprises using a file thread to scan the child node.
7. The method of claim 2, further comprising accessing the summary using a graphical user interface (GUI).
8. The method of claim 2, wherein accessing the summary using a GUI comprises accessing the summary over a network using a web browser.
9. The method of claim 1, further comprising scanning another directory once the reference count is equal to zero.
10. An apparatus comprising:
 - a storage server having a mass storage device;
 - an agent coupled to the storage server, the agent to scan the mass storage device, to collect information about a file stored on the storage server, and to combine the information into a summary of a directory in which the file is located; and
 - a database server coupled to the server and the agent to store the summary.
11. The apparatus of claim 10, wherein the storage server is a filer.

12. The apparatus of claim 10, wherein the information is combined into the summary while the agent collects the information.
13. The apparatus of claim 10, further comprising a multi-appliance management application (MMA) coupled to the storage server and the agent, the MMA to manage the storage server.
14. The apparatus of claim 13, further comprising a graphical user interface (GUI) coupled to the MMA.
15. The apparatus of claim 10, wherein the agent has a first file system different from a second file system of the storage server.
16. A machine readable medium having stored thereon executable program code which, when executed, causes a machine to perform a method of collecting data from a storage server, the method comprising:
 - scanning a directory on the storage server;
 - determining a number of child nodes in the directory, and adding the number to a reference count;
 - scanning a child node to collect information about the child node, and combining the information into a summary of the directory; and
 - reducing the reference count after scanning the child node.

17. The machine readable medium of claim 16, further comprising:
writing the summary to a database server.
18. The machine readable medium of claim 16, wherein scanning a child node comprises using an agent separate from the storage server to scan the child node.
19. The machine readable medium of claim 17, wherein writing the summary comprises writing the summary to a multi-appliance management application (MMA) before writing the summary to a database server.
20. The machine readable medium of claim 16, wherein scanning a child node to collect information about the child node, and combining the information into a summary of the directory occur concurrently.
21. The machine readable medium of claim 16, wherein scanning a directory comprises using a directory thread to scan the directory, and wherein scanning a child node comprises using a file thread to scan the child node.
22. The machine readable medium of claim 17, further comprising accessing the summary using a graphical user interface (GUI).
23. The machine readable medium of claim 17, wherein accessing the summary using a GUI comprises accessing the summary over a network using a web browser.

24. The machine readable medium of claim 16, further comprising scanning another directory once the reference count is equal to zero.
25. A method of collecting data from a file server comprising:
 - scanning a directory on the file server;
 - determining a number of child nodes in the directory using a directory thread operated by an agent;
 - adding the number of child nodes to a reference count;
 - scanning a child node in the directory using a file thread operated by an agent to determine information about the child node;
 - combining the information into a summary of the file server using the agent;
 - reducing the reference count after scanning the child node; and
 - storing the summary on a database server.
26. The method of claim 25, wherein the agent is controlled by a multi-appliance management application (MMA).
27. The method of claim 26, wherein the MMA generates a graphical user interface (GUI).
28. The method of claim 26, wherein the summary is written to the MMA before storing the summary on the database server.

29. The method of claim 25, wherein scanning a child node and combining the information occur concurrently.
30. The method of claim 25, further comprising scanning another directory once the reference count is equal to zero.